

Clinical Research Results Abstract

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What features do patients and clinicians 'want' in the future Internet Of Thing (IoT) systems for asthma: a mixed method study

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Aim: Supported asthma self-management improves asthma outcomes. The Internet-of-Things (IoT) can support self-management with a broad range of applications (not only self-monitoring). Integration of features into (clinician/patient) users' usual routines is pivotal to encouraging adoption of new technology. Sustained clinical involvement encourages patients to keep using technology to look after their asthma. We explored the 'connected' features that patients and clinicians want in order to support self-management.

Methods: We recruited patients and clinicians via social media and professional contacts. In-depth interviews (selected to achieve maximum variation) explored opinions about preferred IoT features. Thematic analysis used the Practical Reviews in Self-Management Support (PRISMS) taxonomy. An online questionnaire was analysed descriptively, enabling triangulation of findings.

Results: 12 patients, 12 (primary, secondary and tertiary care) clinicians were interviewed. 140 patients completed questionnaires online. Patients referred 'passive' observation of their status (i.e. not requiring them to actively enter data), and wanted real-time advice to support their self-management decisions. Peak flows (23.6%), pollen, humidity, air temperature (23.6%), and asthma symptoms (17.9%) were the data that patients most wanted the system to capture. Detecting incorrect inhaler technique, monitoring medication stock and advice on medication adjustment were the self-management advice wanted by most patients. Newly diagnosed patients wanted customised asthma information. Clinicians suggested that alarms about incorrect inhaler technique linked with asthma logs (symptoms/peak flows) could help them assess the patient's condition and select best fit inhaler device/treatments to patients. Clinicians and patients wanted a shift to more flexible consultations and responsive step up/down strategies to maintain control and avoid unnecessary side-effects.

Conclusion: We identified a number of features to inform future connected IoT development. A 'silent' guardian IoT system is an option to support asthma self-management. We propose a paradigm shift in mobile self-management – from standardised monitoring to a personalised, more fluid approach to support individuals over time.

Declaration of Interest

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